

CLAIMS

What is claimed is:

1. An elongated object fastening device, comprising:
 - a holder having an upper surface operable to engage an elongated object;
 - a fastener element connectable to the holder and operable to fasten the holder to a part; and
 - a plug-in snap coupling operable to connect the holder to the fastener element;wherein the snap coupling is closable by a force directed against the upper surface of the holder.
2. The device of Claim 1, wherein the elongated object comprises a cable tree.
3. The device of Claim 1, comprising:
 - a locked position of the snap coupling;
 - wherein the snap coupling is releasable from the locked position by operation of a tool.

4. The device of Claim 1, wherein the snap coupling comprises a displaceable connection, the connection displaceable in a lengthwise direction of the elongated object between the holder and the fastener element.

5. The device of Claim 1, comprising:
a first coupling part of the snap coupling having a recess with an undercut; and
a second coupling part having at least one springing pin insertable in the recess of the first coupling part, the springing pin having a lateral projection operably snapping into the undercut of the recess.

6. The device of Claim 5, comprising:
a width of the springing pin; and
an oblong aperture of the recess extending greater in a lengthwise direction of the holder than the width of the springing pin.

7. The device of Claim 1, wherein the holder comprises:
an under surface positioned opposite to the upper surface;
at least two fingers projecting away from the under surface; and
a catch laterally projecting from each of the fingers.

8. The device of Claim 7, comprising:
 - a plurality of parallel slits extending through the holder;
 - at least two elastically deformable webs defined between adjacent ones of the parallel slits;
 - wherein each finger is connectably attached to a separate one of the webs.
9. The device of Claim 1, comprising:
 - a pair of opposed ledges extendable from the fastener element;
 - wherein when the holder is connected to the fastener element, the holder is secured between the opposed ledges against rotation relative to the fastener element.
10. The device of Claim 9, comprising:
 - an opposed pair of long sides of the fastener element;
 - wherein each of the opposed ledges is integrally connected to one of the long sides of the fastener element.
11. The device of Claim 1, comprising:
 - a retainable, intermediate position of the holder operably allowing holder displacement in opposed directions relative to the fastener element;
 - wherein the holder is laterally displaceable upon exertion of a force.

12. The device of Claim 11, comprising:
- a plurality of projections positionable on one of the holder and the fastener element, the projections being deflectable by application of the force to the holder;
- wherein the middle position of the holder is defined by the projections.
13. The device of Claim 5, wherein the fastener element comprises a holding pin.
14. The device of Claim 13, comprising a springing catch element formed on the holding pin operable to enhance anchoring of the holding pin.
15. The device of Claim 13, comprising:
- a flange connected to the holding pin;
- wherein the flange operably supports the holding pin opposite to the first coupling part.
16. The device of Claim 15, comprising:
- a peripheral edge of the flange; and
- a sealing lip positioned at the peripheral edge;
- wherein the sealing lip is formed of a material softer than a flange material.

17. The device of claim 1, comprising:
- a frame of the fastener element having a rectangular framed opening;
 - a pair of opposed, longer sides of the frame; and
 - a flange connected to the longer sides by a pair of opposed struts extending transverse to a plane of the frame.

18. A fastener system, comprising:

a fastener element having a holding pin, the holding pin adaptable to mount the fastener element to a component part;

a rectangular-shaped frame of the fastener element having a parallel pair of opposed ledges laterally mounted to the frame, and a rectangular-shaped opening positioned between the opposed ledges;

a substantially rectangular-shaped holder having a pair of distending spring fingers oppositely positioned from at least one adjacency surface;

wherein in a fastener engaged position, the holder is adaptable to support an elongated object, the spring fingers are operably engaged with the rectangular-shaped opening, the holder is operably secured between the opposed ledges to resist rotation relative to the fastener element, and the holding pin is engaged with component part.

19. The system of Claim 18, comprising a flange connectably joining the holding pin and the rectangular-shaped frame.

20. The system of Claim 19, comprising a plurality of projections positioned adjacent the rectangular-shaped opening.

21. The system of Claim 20, comprising:
a common width of the spring fingers;
wherein the spring fingers are positioned having the common width bounded between adjacent side pairs of the projections, operably providing a locked holder position.

22. The system of Claim 21, wherein the projections comprise at least an adjacent pair of deflectable projections operably deflected by a lateral force applicable to the holder to release the spring fingers from the locked holder position permitting a lateral translation of the holder.

23. The system of Claim 18, wherein the spring fingers each comprise:
a ramp surface;
a catch extending from the ramp surface; and
a locking surface adjacent the catch;
wherein the locking surface and the catch are cooperatively engageable within the rectangular-shaped opening of the rectangular-shaped frame to releasably fasten the holder to the fastener element.

24. A method for forming a multi-part fastener operable to join an elongated part to a vehicle part, comprising:

- creating a holder element;
- extending a plurality of spring fingers from the holder element;
- forming a frame releasably fastenable to the holder element using the spring fingers;
- joining the frame to a flange; and
- positioning a holding pin on the flange;

wherein in an installed condition, the elongated part is operably connected to the holder element, the holder element is releasably fastened to the frame, and the frame joined to the flange has the holding pin operably engaged with the vehicle part.

25. The method of Claim 24, comprising:

- forming a plurality of parallel slits through the holder element; and
- sliding the spring fingers into separate ones of the parallel slits.

26. The method of Claim 24, comprising shaping the holder element to correspond to an elongated part shape.

27. The method of Claim 24, comprising securing the holder between an opposed pair of ledges to resist rotation relative to the fastener element.

28. The method of Claim 24, comprising releasably locking the holder element along the frame.

29. The method of Claim 28, comprising positioning the holder element between a pair of deflectable projections.

30. A method to join an elongated part to a vehicle part using both a an elongated part holder having a pair of spring fingers, and a rectangular-shaped frame having a frame opening, the method comprising:

aligning the pair of spring fingers with the frame opening;
releasably joining the holder to the frame using the spring fingers;
locking the holder in a central position along the frame;
connecting the elongated part to the elongated part holder; and
pressing the frame against the vehicle part to operably seal the frame to the vehicle part.

31. The method of Claim 30, comprising positioning the holder between paired projections to lock the holder in the central position.

32. The method of Claim 31, comprising:
laterally pressing the holder to deflect the deflectable projections;
and
operably sliding the holder to accommodate an installation tolerance of the fastener.

33. The method of Claim 30, comprising engaging the holder between a pair of opposed ledges of the frame to resist rotation of the holder relative to the frame.

34. The method of Claim 30, comprising:
- forming a concave-shaped face on the holder; and
- aligning the elongated part with the concave-shaped face.